

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/965,761	RIACH ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Trang U. Tran	2614	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to \_\_\_\_\_.
2. ☒ The allowed claim(s) is/are 1-53.
3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☒ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☒ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|   | 9. <input type="checkbox"/> Other _____.   |

### REASONS FOR ALLOWANCE

1. The following is an examiner's statement of reasons for allowance:

Claims 1-15 and 29-48 are directed to a circuit for generating a train of synthesized sync pulses in accordance with the Bresenham algorithm in response to an input clock having frequency  $F_i$ . Each independent claims 1, 29 and 43 identifies the uniquely distinct features: "first circuit coupled to receive the input clock and configured to generate a control signal indicate of events such that accumulated error, between a first time from a first one to a last one of Z consecutive ones of said events and a second time equal to  $ZT/(AF_i)$ , never exceeds  $1/F_i$ ; and second circuitry coupled to receive the control signal and configured to assert the sync pulses in response to said control signal such that the leading edges of the pulses occur at least nearly periodically, and with accumulated error, between a third time from a first one to a last one of Z consecutive ones of leading edges and a second time  $ZT/(AF_i)$ , that never exceeds  $1/F_i$ ". The closest prior art, Herbert (US Patent No. 6,014,125) discloses a scaling apparatus for horizontally and vertically scaling scan line information stored in a video memory prior to providing the scan line information to a computer display, and Perkins (US Patent No. 4,991,188) discloses a digital frequency divider capable of providing output pulses of frequency  $f_{out}$  related by  $Y/X$  to the frequency of the input pulses  $f_{in}$  where X and Y are positive whole numbers and  $0 < Y/X < 1$ , they both references either singularly or in combination, fail to anticipate or render the above underlined limitations obvious.

Claims 17-24 and 49-51 are directed to a circuit for generating a train of synthesized sync pulses in accordance with the Bresenham algorithm in response to an input clock having frequency  $F_i$ . Each independent claims 17, 49 and 51 identifies the uniquely distinct features: "an accumulator configured to store a Count value, and to increase the Count value by an integer value D during each cycle of the input clock; and a comparator coupled to the accumulator and configured to perform a comparison of the Count value with a threshold value N during each cycle of the input clock and to generate an output signal indicate of the result of each said comparison, wherein N is an integer, wherein the accumulator is coupled to receive the output signal and configured to reduce the Count value by the value N-D when the output signal indicates that the Count value has risen to a value greater than or equal to said value N". The closest prior art, Herbert (US Patent No. 6,014,125) discloses a scaling apparatus for horizontally and vertically scaling scan line information stored in a video memory prior to providing the scan line information to a computer display, and Perkins (US Patent No. 4,991,188) discloses a digital frequency divider capable of providing output pulses of frequency  $f_{out}$  related by  $Y/X$  to the frequency of the input pulses  $f_{in}$  where X and Y are positive whole numbers and  $0 < Y/X < 1$ , they both references either singularly or in combination, fail to anticipate or render the above underlined limitations obvious.

Claims 25-28 and 52-53 are directed to a circuit for generating a train of synthesized sync pulses in accordance with the Bresenham algorithm in response to an input clock having frequency  $F_i$ . Each independent claims 25, 52 and 53 identifies the uniquely distinct features: "an accumulator configured to store a Count value, and to

Art Unit: 2614

decrease the Count value by an integer value D during each cycle of the input clock,  
wherein the accumulator is coupled to receive a frame start signal indicative of  
sequence of frame start events, and the accumulator is configured to set the Count  
value to an initial value  $I = X + N$ , whenever the frame start signal is indicate of one of  
the frame start events, where X is a value and N is an integer value; and a comparator  
coupled to the accumulator and configured to perform a comparison of the Count value  
with the value X during each cycle of the input clock and to generate an output signal  
indicate of the result of each said comparison, wherein N is an integer, wherein the  
accumulator is coupled to receive the output signal and configured to increase the  
Count value by the value  $N-D$  when the output signal indicates that the Count value has  
fallen to a value less than or equal to said value X". The closest prior art, Herbert (US Patent No. 6,014,125) discloses a scaling apparatus for horizontally and vertically scaling scan line information stored in a video memory prior to providing the scan line information to a computer display, and Perkins (US Patent No. 4,991,188) discloses a digital frequency divider capable of providing output pulses of frequency fout related by  $Y/X$  to the frequency of the input pulses fin where X and Y are positive whole numbers and  $0 < Y/X < 1$ , they both references either singularly or in combination, fail to anticipate or render the above underlined limitations obvious.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Art Unit: 2614

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trang U. Tran whose telephone number is (703) 305-0090. The examiner can normally be reached on 8:00 AM - 5:30 PM, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Miller can be reached on (703) 305-4795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TT TT  
January 31, 2005

  
JOHN MILLER  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600